

ARCHAEOLOGICAL
SERVICES
DURHAM UNIVERSITY

on behalf of
Landmark Support Services Ltd

Bottoms Mill
Holcombe Moor
Greater Manchester

artefacts report

report 5062
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Contents

1.	Summary	1
2.	The artefacts	2
3.	Sources	39
Appendix 1: Data tables		41

1. Summary

The project

- 1.1 This report presents the results of the analysis of artefacts recovered during excavations at Bottoms Mill, Holcombe Moor, Greater Manchester (NGR:SD 7670 1690).
- 1.2 Specialist reporting was conducted by Dr C Barclay (coins), Dr C Cumberpatch (medieval and Pearlware pottery), Dr L Gidney (animal bone), and J Jones. The works were commissioned by Landmarc Support Services Ltd and conducted by Archaeological Services Durham University.

Results

- 1.3 Apart from the small medieval pottery component, no artefacts dating to earlier than the 18th century could be identified among the objects studied here. Domestic and industrial objects exist side by side. Study of the selected assemblage accurately reflects the known usage of the site - the cotton spinning mill followed by domestic occupation of the converted cottages - but does not explain what happened on site in the short interval which is thought to have occurred between these two events. The 'cut metal' and perhaps some of the unidentified 'machine parts' may be clues to this mystery, which study of future material excavated from the site may expand upon.

2. The artefacts

Medieval pottery

Summary

- 2.1 The medieval assemblage from the Cinder Hill Engine House, Holcombe Moor consisted of 107 sherds of pottery weighing 445g, representing a maximum of 103 vessels. The data are summarised in Appendix 1.1.

Results

- 2.2 The assemblage consisted of heavily abraded, medieval gritty wares, the majority bright orange to orange-buff in colour, with a small number which were significantly harder and less severely abraded. All of the sherds contained abundant sub-round to sub-angular quartz grit up to 1mm in size (measured along the longest visible axis) and in some cases larger. Other inclusions varied in density between sherds and included hard red iron-rich grit (?ironstone) and occasional soft red and white rock fragments. A distinctive feature of many of the sherds was an apparent difference between the internal and external surfaces. The former were often softer and a bright orange colour while the latter were harder and buff in colour (e.g. B15.205/100.043 Bag 47, B15.200/100.070 Bag 101, rim; B15.200/100.070 Bag 69, two joining sherds). A small number of sherds were buff in colour, often with a grey core and seemed to be harder than the orange sherds and the inclusions may be slightly smaller in size. There was little obvious distinction in the nature of the inclusions and it is probable that all types were of local origin with the variations being the result of differences in the clays or in the firing atmosphere.
- 2.3 The overall appearance of the sherds is of a local variant of the wider Gritty ware industry as represented by the Buff Gritty and Yorkshire Gritty wares of the area to the east of the Pennines, although in what is most probably a local fabric.
- 2.4 In the absence of known parallels and of an established regional type series for the western Pennines the names *Holcombe Orange Gritty ware* (HOGw) and *Holcome Buff Gritty ware* (HBGw) have been coined, with the latter reserved for the few sherds which are buff throughout, sometimes with a pale grey core. The term *Gritty ware* was reserved for vessels which were significantly harder than the majority and which had a distinctively dense body and which appeared to have been fired to a higher temperature.
- 2.5 Vessel forms, as indicated by the rims, seem to be limited to round or pear-shaped jars with rilled shoulders. The rounded, clubbed rims often had a dished internal surface and pointed lip, although how far this profile implies that they are lid-seated is unclear. Other rims were more rounded but had a slight ridge on the inner surface of the rim.
- 2.6 In the absence of any independent dating of the pottery, it is suggested that the date range lies between the mid/late 12th and late 13th to early 14th century, consistent with the dating of Gritty wares in Yorkshire. This suggestion may have to be revised if other examples of these types are recovered from dated contexts elsewhere in the region.

Discussion

- 2.7 In terms of the type of vessels represented, the medieval material is of a domestic character and consists primarily of jar or cooking pot fragments in typical gritty

fabrics. Such wares are, however, normally accompanied by finer-textured wares with sandy fabrics (Buff or Buff-White Sandy wares). Only one small sherd of this type was identified (context 100.070 Bag 26), which is unusual and may indicate that activity on the site was not of a standard domestic type. Further information regarding the nature of the medieval phases of the site may cast further light on this suggestion.

Pearlware pottery analysis

Condition

- 2.8 The three Pearlware vessels - a transfer printed plate (B16.144), a small cup-sized bowl (B16.140) and a dish (B16.093) - together weighed 450g. The latter two were hand-painted. These vessels were in much better condition than the medieval wares and had clearly not been subjected to the same range of post-depositional impacts as had the earlier wares.
- 2.9 Sherds from each have been re-adhered since excavation. The transfer-printed plate is complete apart from a chip at the rim. The other two vessels are less complete, though a profile of each is present.

Results

- 2.10 The transfer printed design on the plate (B16.144) was a semi-abstract floral / leaf design, featuring a lotus-style plant which has been impossible to track down and identify according to the pattern name. This is not to say that the pattern is entirely unknown, but reflects the fact that such patterns proliferated in the later early modern period and their identification depends upon access to a comprehensive reference library. A search of sources available to the author at the time of writing failed to reveal any specific parallels, with the result that although the broad date range is not in doubt, the pattern cannot be named or attributed to any specific manufacturer.



[144]

- 2.11 The dish (B16.093) was decorated with hand-painted blue bands on the internal surface with a stylised pineapple in the centre. It also bore an impressed maker's mark on the underside in the form of an open hand, but unfortunately this was not accompanied by a name and the hand motif is absent from Godden's catalogue of maker's marks (1991). A search of other sources also failed to reveal the identity of the design with the result that it remains unidentified.



[093]

- 2.12 The cup, or more probably, bowl, as there is no sign of a handle (B16.140), was decorated with underglaze hand-painted designs based on a simple floral motif with yellow flowers, green leaves and black stems. There was small floral motif in the centre of the base internally and a similar design forming a looped frieze externally. As with the two pearlware vessels described above, no specific parallel could be found for the design and it remains unidentified. The date range cited in the data tables, while broader than might be desired, is generally accurate, but further research might allow it to be refined.



[140]

Discussion

- 2.13 The early modern material is of good quality and would have been considered as fashionable and desirable at and after the time it was made and sold. Such vessels would normally be expected on an urban site or on a rural site of some significance, such as the residence of a well-to-do yeoman farmer or middle class professional such as a doctor, priest, lawyer or substantial tradesman. That it was found on a site with industrial associations might suggest that it had been replaced by later, more fashionable wares (transfer printed Whiteware, Bone China) in its original context and passed down the social scale for use in a more utilitarian context. This would suggest that its deposition took place some considerable time after the date of manufacture, probably in the early to mid-19th century.

Archiving and curation

- 2.14 Once the project is complete, the medieval and Pearlwares assemblage should be deposited in its entirety in the appropriate local museum or finds depository where it will be available for further research in the future. This is of particular importance as the medieval pottery is of a type that has not been previously documented and as such is of considerable interest in the wider regional context. The Pearlwares clearly represent a significant aspect of activity on the site but remain unidentified. It is highly probable that further research will rectify this situation and that the identification will contribute to a better understanding of the site and its connections in the early modern period.

Ceramic hen's egg

- 2.15 Context [152], the fill of the East bay northern sunken feature, held a complete, though cracked ceramic hen's egg. This hollow, glazed whiteware object is 61mm long x 41.4mm wide max. Examination established that it was made in two halves – a joining seam can be seen running around the egg. There is also a small hole through the fabric, made at the time of manufacture, probably to allow air to escape and avoid the egg fracturing during firing.



[152] Ceramic egg, showing joining seam and damage

- 2.16 Such eggs are still made today and are used either to encourage laying, particularly in the 'correct' place, or to placate a broody hen. Today, they are made in a variety of materials, including plastic.

Animal bone analysis

Results

- 2.17 Faunal remains were recovered from, mostly, make-up deposits associated with a 19th century water mill and cottages. The few bones found are well preserved, with the exception of context [165]. All fragments found are listed in Appendix 1.2. The categories cattle and sheep-size indicate fragments of ribs and vertebrae. In keeping with the recent origin of the finds, saw mark butchery was observed on finds from contexts [55, 72, 131, 135, 140]. Rodent, most probably rat, nibble marks were observed on bones from contexts [55 and 72].
- 2.18 The cattle-size rib and vertebrae fragments indicate beef joints on the bone, such as rib roast and flank. Part of a leg of mutton joint was found in context [72]. A split sheep-size lumbar vertebra from context [72] indicates that the carcase was split into sides and the saddle cut into chops. A sawn, sheep-size proximal rib from context [131] indicates a mutton chop, while a sawn distal rib from [140] indicates a belly cut.

- 2.19 Access to marine resources is indicated by the cockle shells from context [72], mussel shell from context [83] and whelk shell from context [86].
- 2.20 The finds from context [165] comprise a burnt fragment, probably sheep size rib, and a weathered fragment, possibly of cattle-size long bone. The indeterminate fragment from [93] is calcined.
- 2.21 A possible hare tibia shaft fragment, calcined, came from ash layer [178].
- 2.22 Two fragments of bone artefacts were found (see paragraphs 2.86-87 below). Part of a bone handle plate with fine cross-hatched decorated on the exterior was found in context [013]. Although rivet holes with iron staining are apparent, this is a very fine and delicate object. The interior of the bone shows cancellous tissue, indicating that it has been made from a flat bone, such as a large rib, scapula or pelvis, and not from a robust section of limb bone. A small fragment from context [021] has bands of thick and thin engraved lines on the exterior. The fragment is distorted as it has been burnt. The interior again shows cancellous tissue, indicating that it has been made from a flat bone.

Discussion

- 2.23 The bones are evidence of domestic food refuse. The small size of the assemblage suggests either that the inhabitants rarely purchased cuts of meat on the bone or, perhaps more likely, that rubbish was removed and/or disposed of elsewhere on site. Utilisation of wild food resources is hinted at by the calcined possible hare tibia shaft fragment and there seems to have been only limited access to marine resources. Dating is confirmed by the fact that the saw as a butchery tool was an innovation of the early 19th century.

Leather and wood assessment

Results

- 2.24 A small number of fragmentary organic artefacts were recovered from the site, preserved in pockets of waterlogging. Leather and wood, in common with other organic materials, were used extensively in the past, but their abundance is seldom reflected in the archaeological record, as organics can only survive in their original form after burial by continuous waterlogging in a favourable, anoxic environment. On this site, such preservation is confined to a few clay-filled contexts. Five pieces of leather and a very fragmentary wooden object were found.

Leather

- 2.25 The clay [83], under the fill of the Central bay, preserved three pieces of leather, one of which is the torn, leading end of a belt or strap, 125mm long x 39mm wide x 5mm thick. Its rounded point is intact and three perforations (5mm diam) survive, one of which shows evidence of use/pulling.



[83] Strap fragment

- 2.26 The others are two non-joining but probably related leather fragments, possibly from a machine drive belt, 174 & 56mm long x 46mm wide max. Long edges are very damaged and the short ends are all torn. Both pieces have very fine rows of zig-zagging impressed into and just cutting through the leather - undoubtedly done by a machine - perhaps to roughen the surfaces and improve grip. One of the long edges of the larger piece has a plain margin but the other does not, suggesting that it does not survive to its full width. This fragment also has iron corrosion deposits on its surface. No such leather drive belts can be seen in the Science Museum Water Spinning Frame image (see paragraph 2.50 below), but these two fragments undoubtedly had an industrial use.



[83] Leather drive belt fragments

- 2.27 Gravel and clay context [170], again from under the Central bay fill, had a small piece of very hard leather 84 x 26 x 3mm thick. It is not clear whether any of its edges are original, but there are three possible stitch holes or perforations close to one short end. Unknown use.



[170]

- 2.28 Clay and ash context [184] had an irregularly-shaped fragment of hard leather 84 x 34 x 4mm thick, all its edges torn. Of unknown use.

Wood

- 2.29 Context [120], a coarse sand and gravel layer, somewhat surprisingly preserved around 16 small fragments from an artefact identified as part of a brush. The wood

is not well-preserved and its condition suggests it has been subject to cycles of wetting and drying, causing collapse of the structure. Nonetheless, several holes drilled into the wooden brush back can be seen, in some of which the small bundles of bristles have survived. These are likely to have been made from animal (probably hog) hair and were fixed into the wooden back either using pitch or by wiring the bundles in place. No evidence of either method survives here.

- 2.30 A sample of the wet wood was taken and identified microscopically as beech (*Fagus sylvatica*). Beech has long been used for making brush backs, as the wood will allow the drilling of the many holes needed to take the bristles without splitting (Edlin 1974, 35). None of the fragments here now join together convincingly, but placement suggest the brush was at least 125mm long x 25mm wide x c10mm thick. A x3 microscopic photograph (below right) shows some of the bristles *in situ* in a broken drill hole, against the wood of the brush back.



[120] Some of the wooden brush fragments (left) and X3 image of the hog bristles (right)

- 2.31 The leather and the wood fragments have been conserved for inclusion in the site archive.

Clay pipes

Results

- 2.32 Tobacco smoking was widespread in England by the end of the 16th century, and an industry producing clay pipes in moulds had already sprung up (Oswald 1975, 5) to cater for this.
- 2.33 In common with most post-medieval occupation and industrial sites countrywide, Holcombe has produced a relatively large number of clay tobacco pipe stem and bowl fragments. No pieces which could be dated to earlier than c1790 were identified from the site and it is likely that much of the assemblage is of 19th century date, with a cluster - identifiable from the wheatsheaf bowl design - dating to the mid-19th century. The assemblage is tabulated in Appendix 1.3 below.
- 2.34 A total of 523 pieces were examined, of which 461 are stem fragments and 62 are bowls or bowl fragments. Sixty contexts across the site had pieces of pipe, but few produced significant numbers. Only 5 contexts [048, 053, 109, 131 & 178] had more than 30 fragments, and all these are either topsoil, garden loam or ash/cinder contexts (Table 1.2), reflecting the locations where smoking and breakages were most likely to occur, or where the broken pipes were disposed of.

- 2.35 Only one maker's stamp was found, on a stem fragment from topsoil context [048]. This had a single letter, incuse in a small circle, either side of the spur heel. One letter is probably an 'O' - not a common letter in stamp initials - but the other is unfortunately indecipherable. No likely candidates have been found among known pipemakers in Cumberland or the surrounding counties. The shape of the heel makes a 19th century date likely for the fragment, however.
- 2.36 Some pieces, especially stem fragments, have been deliberately coloured orange e.g. from contexts [048, 053, 109, 181], or black, from contexts [054, 181, 198]. Three stem fragments from [053 & 178] showed traces of green glaze, which in the 19th century was sometimes applied to the mouth end of the stem to prevent the clay adhering to the lips. Many of the fragments show evidence of burning, as might be expected from their contexts.



Wheatsheaf motif on bowl from [013]



'Running legs' on bowl fragment from [132]

- 2.37 Sixty-two pipe bowls and bowl fragments were identified, only 13 of which are from bowls more than 50% complete. Twenty-three bowls or bowl fragments are decorated. The majority of the decorated pieces - 16 from contexts [013, 053, 131, 178, 183 & 184] - have a wheat sheaf motif along the often-prominent mould seams, giving them a date of around 1840-60. A few pieces from context [131] have traces of a ribbed design, dating them to between c1790-1860. One fragment from [093] has a small section of a rope or garland design, again a 19th century motif, and a fragment from amongst the pieces in context [178] shows a cluster of dots - part of an unidentified motif, though likely also to be 19th century like the other pieces from the context. A small bowl fragment from [132] shows a pair of 'running legs', unfortunately not identifiable as part of the triskele motif of the Isle of Man, as the two legs depicted are too close together.

Glass

Results

Industrial glass

- 2.38 Among the many other glass carboy sherds found and identified by the excavators, eleven sherds were examined here. Carboys were (and are) large, robust glass vessels designed to contain hazardous liquids. Of the sherds examined, 10 came

from demolition fill contexts [054 & 055] and one from [135], under the West bay East room floor. Four of these sherds are from near the neck of the carboys, while the remainder are body sherds. The carboy neck was made from thick (8-10mm) blue/green, originally translucent glass, with a c45mm internal rim diameter, and a thick, extra, roughly-applied external ring of square or 'D'-sectioned glass, c19-26mm wide, perhaps to further strengthen the vessel or to make lifting and transportation easier and safer. The variability of the shape of the applied ring does not suggest mass production, but rather that the carboys were individually made, possibly in different locations. The body sherds are c3.5-6mm thick.



[055] Carboy glass showing applied ring, left



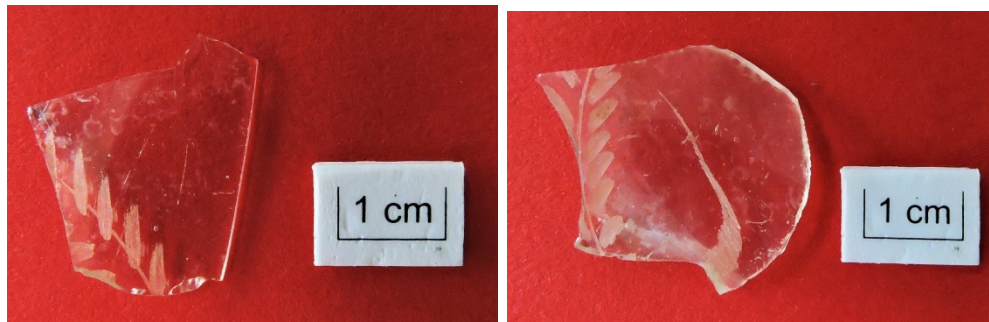
[055] Carboy glass

2.39 The excavators suggest that the containers once held bleach which was used in the cotton spinning process. The condition of the glass sherds – unduly weathered for their age, both inside and out – would certainly support the notion that they once contained a corrosive liquid. The carboys would most likely have been further protected and supported by either a wooden frame or wicker baskets when in use.

2.40 Further evidence from amongst the glass recovered for industrial or chemical activity on site is provided by an almost complete glass stopper, possibly for a chemical bottle, found in drain fill deposit [041], and a broken stopper recovered from cinder layer [053].

Engraved vessel glass

2.41 Two fragments of engraved vessel glass were examined, one from demolition fill [055] and one from [106], the West bay West room floor. These two sherds, in an unweathered clear glass, are very likely either from the same vessel or the same set of vessels. Both are body sherds, [055] being 0.9mm thick and [106] being 1.2-1.7mm thick. Both show parts of a wheel-engraved floral design.



Engraved glass, possibly from the same vessel [055] left, [106] right

- 2.42 In the 18th and 19th century, following the discovery and manufacture of clearer, heavier lead or 'flint' glass, both cut and engraved glass was much more widely produced and became available to a wider section of society.

Beads

- 2.43 Two glass beads were examined, one from cobbled surface [023] and the other from [156], below the West bay West room floor. The bead found in [023] is round with slightly flattened ends, 10mm diam x 8mm high. It is in an unweathered, dark rose red glass and has a 1mm perforation. X10 microscopic examination found few bubbles in the glass, but there are a few tiny slaggy inclusions. There is slight damage around the perforations. Likely to be 19th century, though the bead shows few indicators of its age, apart perhaps from the neatness of its perforation.
- 2.44 The bead from [156] is also round with slightly flattened ends, but is only 6mm diam x 5mm high. The poorly-produced glass is an opaque dark blue, very rough and weathered under X10 microscopic examination, with many tiny holes on its surface caused by 'burst' bubbles. Again, there are few indicators of its age, but the neatness and size of the 1.5mm diam perforation, together with its finds spot, points towards a 19th century date.

Metal objects

Methodology

- 2.45 Iron objects provisionally identified as non-nails from among the artefacts selected by the excavators for further possible reporting, were X-radiographed to assist with possible conservation and identification. X-radiography (XR) revealed many more nails and fragments which were not immediately identifiable. Nineteen objects from the X-rayed, non-nail iron assemblage were chosen for investigative conservation following XR.
- 2.46 Obscuring soil and surface corrosion products were selectively removed using hand tools and air abrasion, under X10 microscopy, guided by the X-radiographs. Air abrasion directs a stream of compressed air mixed with fine (28µ) aluminium oxide powder through a small nozzle towards the object, which is viewed under X10 magnification in a closed, glass-topped cabinet. The operator is able to remove very small, discrete areas of overlying corrosion and/or soil, and both the air pressure and volume of abrasive powder delivered through the hand piece can be altered, allowing the rate of corrosion removal to be finely controlled. Once revealed, the corroded surfaces of the iron objects were consolidated using 6% Paraloid B72 (an ethyl methacrylate co-polymer) in acetone.

- 2.47 Copper alloy and lead objects selected for conservation were conserved under X10 microscopy, again guided by the X-radiographs, where appropriate. Overlying corrosion and/or soil were removed using hand tools to reveal form and surface detail. The objects were then consolidated using 6% Paraloid B72 in acetone.
- 2.48 Surfaces of some objects were characterised by qualitative energy dispersive X-ray fluorescence (EDXRF) analysis, using a Bruker Tracer 5i hand-held machine. Results from these analyses are included in the relevant catalogue entries below.
- 2.49 Few groups of similar objects were identified, not surprising in such a small assemblage. The catalogues below have grouped together similar objects, where possible.

Results

Machine parts

- 2.50 There was particular interest in identifying further components of the Waterframe Spinning Machine which was known to have operated on site. This technology, an improvement on James Hargreaves' Spinning Jenny of 1764, was patented in 1769 by Richard Arkwright. Its use of multiple spindles allowed for greater productivity, the thread it produced was stronger, and the machine did not require skilled operators.



Waterframe Spinning Machine in the Science Museum, London

- 2.51 The illustration above shows an original 8 spindle Waterframe Spinning Machine of 1775, held in the collection of the Science Museum in London. The machine used at Holcombe Mill was very likely similar.
- 2.52 Several metal and wood and metal roller fragments had already been identified by the excavators (090C & 090D below) and careful examination of the artefact assemblage against the above illustration now attempted to identify more parts. Few new components were found, unfortunately. Three more, highly fragmentary roller fragments were identified (090A & 090B below), together with a small, spiked cup-like artefact, (127 below), several of which can be seen in the illustration above,

fixed into one of the wooden bars and used to support the lower ends of the distaffs.

- 2.53 The Holcombe metal and wood and metal roller fragments are almost identical to those in the illustration above, apart from the fact that the metal rollers in the illustration appear to have white metal plating and the Holcombe rollers do not – though plating may have worn away in use or during burial, and plating was indeed observed on the wood and iron roller fragment [090C].
- 2.54 Though most of the objects in the catalogue below cannot be specifically assigned to the Waterframe Spinning Machine, these are not domestic artefacts and may have been associated with the waterwheel or its workings, or with other, unknown machines which may have operated alongside the Spinning Machine or in the period following it, between the relocation of cotton spinning activities to the factory known to have been constructed downstream from Holcombe and the conversion of the Mill into cottages, around 1825.

Catalogue

- 2.55 [048]: Small copper alloy (CuA) block, 'U' shaped in section with thickened margins, 15 x15 x5.5mm thick max. There is evidence of slight wear on all edges.
- 2.56 [053]: CuA plug, 19.5mm long. The circular, lipped top is 13.5mm diam and has a central 3mm perforation with a rounded blind end. The outside of the shank is 8mm diam. There are traces of iron (Fe) corrosion inside the lip and the perforation.
- 2.57 [079]: Sheet CuA pipe fragment, intentionally bent, 86mm long x 15.5mm diam tapering to 11mm. The wider end has a very slightly rolled edge and is probably original, the other end is torn. Made from thin sheet with a lapped and probably soldered joint.
- 2.58 [090]A: Probable Fe roller fragment, very highly corroded, 37mm long with both ends broken. A second layer of thin Fe (the sleeve) covers c24mm of its length, consistent with the construction of the Fe and CuA rollers (090D below). The central rod is 8mm diam and the sleeve c14mm diam.



[090]A

- 2.59 [090]B: Two further, possible Fe roller fragments. One is 44mm long x 7-12mm thick, with a round, flat head 18mm diam. Conservation of this very highly corroded object has not found a distinction between the rod and its covering sleeve (as in [090]A above), but this probably existed. The other is a fragile and extremely corroded fragment 14mm long with a flat 'head' 12mm diam and a 'shank' – now totally corroded and hollowed out – 10mm diam.
- 2.60 [090]C: Wood and Fe roller bar fragment, 94mm long. The Fe rod, broken at both ends, is 5mm diam at its ends and 8mm diam between the two wood rollers. The

iron has white metal plating. Each wood roller is 34-35mm long, the wood now mineralised, eroded and damaged. The wood rollers were 25mm+ in diam. Iron corrosion products around the point at which the Fe rod passes through the wood prevents accurate measurement, but the perforation through the wood is c10mm diam.



[090]C

- 2.61 [090]D: Four sections of metal (CuA/Fe) roller, none complete. Two have been conserved. The longest piece is 283mm in length, the others are 181, 176 and 112mm. They appear to have a central Fe rod, 13-16mm diam, as conserved, onto which knurled CuA rollers, 25mm long x 20mm diam, are placed every 25mm. However, at one conserved, broken end, the central Fe rod can be seen to be narrower (10mm diam) with further corroded iron around it (photo below right). It is likely that the narrower Fe rod had a series of wider 'sleeves', onto or between which the CuA rollers were fixed, possibly by 'sweating' the metals, as suggested by the excavators – i.e. by heating a metal with a lower melting point than those being joined. No evidence of this survives, however. The corroded iron 'sleeves' between the CuA rollers appear to be wider in the centre. This may have been to prevent lateral movement of the CuA rollers along the central bar during operation of the spinning frame.



[090]D

- 2.62 [127]: Small, cup-shaped object 17mm long, cup 15mm diam with integral pointed shank. The cup is c5mm deep with a 2mm flat lip around its edge. Careful examination of the Science Museum illustration of the Spinning Frame Machine shows an apparently similar device (probably one of several) inserted into the wooden rail below the distaffs holding the cotton fibre. This context also produced a small perforated circular object 15mm diam x 3mm thick, its edge showing part of a screw thread. This may be part of a worm gear. X10 microscopic examination suggests the metal may have sheared off at the breaks. The central perforation,

originally circular c5.5mm diam, is badly worn on one side and distorted into a sub-oval shape, possibly accounting for the breakage.



[127]

- 2.63 [135]: Curved Fe toothed gear wheel fragment, 165mm long x 42mm high max x 20mm thick, both short ends broken. The wheel has a repeating pattern of three teeth, each 9-10mm wide with 'U' shaped gaps c16mm deep between, followed by a single c10mm wide tooth with a 'U' shaped gap c25mm deep, arranged over c72mm. The tops of the teeth are rounded and some appear worn or damaged. There is a damaged, sub-rectangular lug, now 44mm wide x 32mm deep attached at the mid-point of the fragment. A projection of the curvature of the gear wheel fragment gives a diameter of c900mm for the gear wheel. This is too large to be a component of the Waterframe Spinning Machine and it is probably part of the gearing from the water wheel itself or of an unknown later machine, making use of the water wheel.



[135]

- 2.64 [148]A: CuA bar fragment 42mm long x 14.5mm wide x 6mm thick (cf [156] below). One short end is broken, the other is intact and slightly bevelled. It has one intact 4mm perforation with no signs of wear and one partial, countersunk c4mm perforation at the break. Likely a machine part, but it cannot be identified on the Waterframe Spinning Machine illustration.



[148A]

- 2.65 [148]B: CuA gear wheel, 66mm diam including teeth. The teeth are spaced at 5 per 28mm, each being 3.2mm wide x 5.7mm deep. One face of the gear is flat with a central 10mm diam perforation. The other has a 6mm deep lip and a central lug 20.5mm diam x 12.5mm deep around the perforation. Likely a machine part, but it cannot be identified on the Spinning Frame illustration.



[148B]

- 2.66 [148]C: CuA plug 20mm long with a 5mm deep external lip around a 17.5mm diam opening with a central 7.5mm diam perforation, 8mm deep with a blind end. The outside is octagonal in shape, 12.5mm diam, with alternating wide and narrow panels. Also from this context are two, non-joining but probably related, solid CuA components, each 'D' shaped in section, 34 & 35mm long x 21.5 & 24mm wide x 9 & 10mm thick. The profile of each is thicker towards one end. The internal faces show differing wear patterns. Of unknown use, but likely to be machine parts, though they cannot be identified on the Waterframe Spinning Machine illustration.



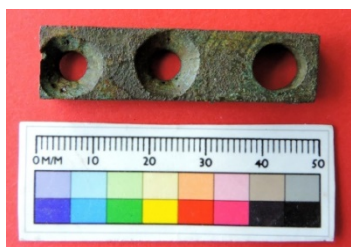
[148C]

- 2.67 [152]: Apparently complete CuA component, 44mm long with a tapering, pointed rectangular shank 6.5 x 5.5mm max. The forked top, 14-16mm wide has a central, 'U' shape between the 8 x 4mm rectangular sectioned prongs with rounded tops. Of unknown use, but likely to be a machine component, though it cannot be identified on the Spinning Frame illustration.



[152]

- 2.68 [156]: CuA bar fragment 46mm long x 12.5mm wide x 5mm thick – similar to [148]A above, though width and thickness differ. There are three perforations, two countersunk, 5mm diam and one 8.5mm diam. One short end is original, the other has either broken or been cut. Likely a machine part, but it cannot be identified on the Spinning Frame illustration.



[156]

'Cut metal'

- 2.69 Several pieces of copper alloy were included among the artefacts provisionally identified by the excavators as possible machine parts. None seem to be such, at least not in their present form. However, some show evidence of having had pieces and shapes cut from them. Whilst copper alloy does not seem to have been used in many of the components of the Waterframe Spinning frame, it is possible that an unspecified industry or craft using or re-using copper alloy sheet and block fragments was operating alongside or following the cotton spinning activities on site. What that industry or craft may have been, however, remains obscure and is unfortunately not illuminated by examination of the small assemblage of copper alloy debris catalogued below.

Catalogue

- 2.70 [009]: Curving irregular 'C' shaped CuA piece 70mm long, made from rectangular-sectioned bar with variable dimensions 10 x 5mm to 6 x 5mm. The outside top curve and the ends of the 'C' shape show some rounding and wear, but the other edges are sharp and unworn. Both faces are flat. There are random small cuts and notches and cutting tool marks along the inside curve of the 'C'. (cf [166]).



[009]

- 2.71 [024]: CuA bar fragment 56mm long, regular rectangular section 7 x 4.5mm thick, short ends cut. One face has a short, rounded, diagonal cut/drill mark Tool marks along one long edge and one face. This context also produced a short piece of sub-circular lead rod 19mm long x 5mm diam.



[024]

- 2.72 [053]: Semi-circular solid CuA fragment 22.5mm wide x 6mm thick, its outside edge intact. Two semi-circular pieces have been taken out along the inside edge, 7 & 10mm long.



[053]

- 2.73 [083]: Three CuA fragments: piece from an originally circular sheet 21+mm diam x 1.7mm thick, undecorated with a pitted surface; small solid sub-rectangular block 13 x 12.5 x 11mm with tool marks on all surfaces. One face is a shallow 'U' shape, another face has part of a shallow circular impression or wear mark and another has part of an irregular linear impression or wear mark; part of an originally ?circular component/object, 40+mm diam x 8.5mm thick, with cutting or file marks around the outside edge. The inside edge is now a shallow 'S' shape, with irregular (though smoothed) cut marks at right angles to the flat faces.



[083]

- 2.74 [148]: Two CuA fragments: curved bar 49.5mm long, rectangular section 7mm wide x 3.5-4.5mm thick, short ends broken or cut, other edges sharp and unworn; part of a CuA bar (cf 148A & 156]) 50.5mm long, rectangular section 17 x 7mm, one short end intact. There are two countersunk perforations 4.5mm diam. The other short end, rounded where intact, is bent with a large, irregular semi-circle, 22mm wide cut from it.



[148]

- 2.75 [166]: Solid CuA 'C' shape (cf 009), 100mm long, slightly faceted, irregular sub-rectangular section, variable dimensions between 9 x 9.5 and 9 x 6.5mm. Both ends have been deliberately shaped to a point. All edges of this object are rounded/worn

and fairly smooth. This may be an intact object, though the irregularity of its dimensions and rough finish suggests re-purposing into its present form.



[166]

Cutlery

- 2.76 Fragments from up to 13 pieces of cutlery – knives, spoons and a probable fork – were examined.
- 2.77 A fragmentary iron table knife with a bone handle was recovered from demolition rubble fill [069] and a probable knife blade fragment came from rubble context [013]. A bone handle, probably from a fork, with just a fragment of the iron bolster surviving, came from Central bay fill [079]. In addition, decorated bone plates from two implement handles were found in contexts [013] and [021].
- 2.78 Parts of four complete or fragmentary spoon bowls and pieces from five complete or fragmentary spoon handles were found. All the spoon bowls are made from lead alloy, as are three of the spoon handles, the fourth being plated iron and the fifth being copper alloy, probably originally silver plated.
- 2.79 One lead alloy spoon bowl (unfortunately u/s) is complete, another, from [156], a deposit under the West bay room floor, is almost complete, a third, from [197] a loamy stone layer, is incomplete but the bowl shape can be discerned. The fourth, also u/s, is just a sliver.
- 2.80 One fragmentary lead alloy handle was found u/s, a second, better-preserved but fragmentary example, comes from [086], an ash layer under the Central bay flagstones, the third lead alloy handle is attached to the fragmentary bowl from [197]. The plated iron example comes from [135], under the West bay East room floor and the plated copper alloy handle comes from cobble surface context [023].
- 2.81 Qualitative surface EDXRF analysis, using a Bruker Tracer 5i portable machine, was carried out on the spoon bowl from context [156]. This confirmed that it was made from pewter, a lead/tin alloy.

Catalogue

- 2.82 [u/s]: Spoon bowl, lead alloy, complete, no handle remains. The bowl is a rather pointed oval in shape, 42mm long x 29mm wide max x 1-1.5mm thick. There is a reinforcing drop on the back where it joined the handle. 19thC.



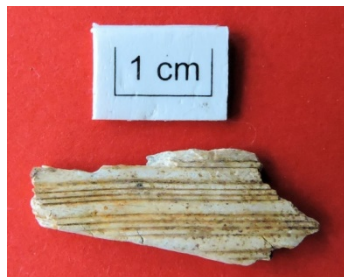
u/s

- 2.83 [u/s]: Sliver of probable spoon bowl, lead alloy, slightly dished, 44mm long x 13.5mm wide x 3.5mm thick. No edges are original. Possible cut mark on the back.
- 2.84 [u/s]: Part of a lead alloy spoon handle, slightly bent, 61mm long, sub-rectangular in section 8.5 x 4.5mm. Both short ends are broken.
- 2.85 [013]: Probable iron knife blade fragment, wedge-shaped in section, 27mm long x 18mm wide max x 2.4mm thick max. The back of the blade is square to rounded. Both short ends broken, back intact, blade edge rather fragmentary. Completely corroded, no metal remaining.
- 2.86 [013]: Bone handle scale fragment, 68mm long x 17mm wide max x 4mm thick max, made from a flat bone such as a large rib, scapula or pelvis. The lower rounded end is well-preserved and shows signs of wear. Part of one long edge is also intact. There is surface decoration in the form of fine cross hatched engraving, probably done by hand, as examination under X10 magnification shows the cuts to be slightly irregularly spaced. The rounded end echoes the 'pistol grip' shape of cutlery of the late 18th century. The bone is stained by iron corrosion products and also shows parts of two or possibly three iron-stained perforations for the iron rivets which would have held the scale to the iron tang.



[013]

- 2.87 [021]: Small, burnt bone handle scale fragment 30 x 12 x 2mm thick max, made from a flat bone such as a rib, scapula or pelvis. The angled long edge appears to be original. The fragment is finely engraved with three wide ribs, each with three narrow ribs between, probably done by hand – fine tool marks are visible under X10 magnification. The original shape of the scale cannot be determined, nor the implement to which it was attached. Probably late 18th century.



[021]

- 2.88 [023]: Copper alloy probable spoon handle, broken off at the handle/bowl junction. A fiddle shape handle, it is 92mm long, 13.5mm wide max and just 1mm thick. This is a design which came into use in Britain around the end of the 18th century (Moore, 2014, 40). The front of the handle has two narrow decorative ribs. There may have been further decoration, but much of the surface has been lost. The back has a series of assay marks suggesting that it was originally silver-plated, though no trace

now survives. These marks are indecipherable apart from the date letter, a decorative 'N', giving a year of 1836-7, which fits well with the shape of the handle.



[023]

- 2.89 [069]: XR7276. Knife handle with bone scales plus iron tang, bolster and part of the blade. The object is 129mm long overall. The bone handle, made from a large animal sized long bone shaft, is 82mm long and oval in section 20mm x 15mm and is intact, though damaged and stained by iron corrosion products. The handle is undecorated and lacks a polished finish. The remains of three small iron rivets hold the handle tang and scales together. The tang does not appear to run (or perhaps survive) through the full length of the handle. The blade has an integral bolster and choil. The surviving base of the blade is very highly corroded but intact. It is wedge-shaped in section, 20mm wide max x 2.7mm thick. The shape and style of the handle and the shape of the surviving blade fragment suggests a date of mid-late 18th century.



[069]

- 2.90 [079]: XR7276. Probable fork handle with bone scales plus part of probable iron bolster. The object is 84mm long overall. The bone handle, made from a large animal sized long bone shaft, is 72.5mm long and oval in section 18mm x 16.5mm, is intact though stained by iron corrosion products. It is undecorated but has a smooth, polished finish. The remains of three small iron rivets hold the handle tang and scales together. The tang runs the whole length of the handle. The surviving iron at the top of the handle is completely corroded, but may be part of a small, integral bolster, some 10mm wide x 8mm thick, which narrows abruptly at the break to 4mm diam. This shaping suggests the handle belongs to a fork of mid-late 18th century type, which had a length of often circular-sectioned metal below the tines.



[079]

- 2.91 [086]: Part of a lead alloy spoon handle with 'shoulder' (cf [197]) 58mm long, rectangular in section tapering 10-7mm wide x 4mm thick. The wider short end is

broken below the bowl joint, the other may have been cut. Probably part of a 'fiddle' shaped spoon of 19th century date.



[086]

- 2.92 [135]: XR7271. Iron spoon handle, bowl lost. The object is 122mm long x 21mm tapering to 6mm wide x 1-3.5mm thick. The iron is highly corroded but still bears substantial traces of white metal plating. There is no decoration or maker's mark. The spoon handle is of Old English type, its end bending slightly downwards. This design dates to c1760+.



[135]

- 2.93 [156]: Almost complete lead alloy spoon bowl, handle lost. Bowl is a slightly pointed oval shape 74mm long x 38mm wide x 3mm thick. There is a reinforcing drop on the back where it joined the handle. Later 18th century. Qualitative surface EDXRF analysis confirms that this is made from a lead/tin alloy.



[156]

- 2.94 [197]: Fragmentary lead alloy spoon bowl plus part of handle. The part bowl survives in three fragments, not quite joining. The bowl is c57+mm long x 44mm wide max x 2.5mm thick. The handle is 57mm long from where it joins the bowl, sub-rectangular in section, 7 x 5mm, and has a 'shoulder' around 15mm below the bowl joint. The handle back has a central raised decorative line which extends onto the back of the spoon bowl. Overall length 115mm+. Later 18th/19th century.



[197]

Discussion

- 2.95 Many of the contexts at Holcombe which have produced finds suggest rubbish disposal or demolition, so it is difficult to determine whether objects were discarded because they were broken and had reached the end of their useful life, or were just damaged (or further damaged) in the burial environment.
- 2.96 Burial environments are usually detrimental to the appearance of lead alloys. Physical and chemical deterioration or, conversely, the formation of a protective surface patina, seems to depend on the proportion of lead in the lead/tin alloy (Cronyn 1990, 211). It may be assumed that the pewter spoons seen here, though apparently quite roughly made, would have been rather more elegant when in use, as pewter was intended to be polished and to have a silvery appearance.
- 2.97 Items of cutlery were likely to have continued in use for as long as possible, as they were relatively expensive for ordinary households to replace unnecessarily. The apparent date range of the cutlery items is wide and reflects the known overall post-medieval occupation period of the site. Cutlery dates range from the mid- to late-18th century for the knife and fork from [069] and [079] and the spoon handle from [135] through to the mid-19th century for the spoon handle from [023]. Though it does not seem possible, from their contexts, to definitely associate many of the objects with the Spinning Mill phase of the site or with its subsequent conversion to cottages, we may assume that the 19th-century objects are most likely to have been used by the later cottage occupants.

Buckles

- 2.98 Just one fragmentary shoe buckle was recovered from the rubble under the Central bay clay fill. It can be dated to the later 18th century.

Catalogue

- 2.99 [084]: Part of a cast copper alloy shoe buckle, rectangular with rounded corners, 43mm wide. The buckle was made from rectangular-sectioned bar 3 x 4mm and has a curved profile in the fashion of the later 18th century. The frame thickens at the side mid-points, where it was pierced or drilled for the attachment of the central bar and pin, now lost. There is some decoration in the form of straight, diagonal and curved lines, though too little survives to discern any decorative scheme.



[084]

Probable tools

- 2.100 Just one item which could definitely be identified as a tool was examined. It came from context [050], a stony loam layer. Another object, from [083], a solid clay layer under the Central bay fill, may be a tool but has a rather knife-like appearance, though it lacks some of a knife's defining characteristics. Both objects are now highly corroded and it was not possible, even following X-radiography and investigative conservation, to establish their condition when disposed of – were they broken and therefore discarded, or were they accidentally lost?

Catalogue

- 2.101 [050]: XR7668/9. Bladed tool fragment with corroded 'blade' and the remains of an integral tang for handle attachment. The tool is 162mm long x 20mm wide x 6mm thick. The 'blade' is straight-sided and does not taper or thin along its extant length. It is not wedge-shaped in section and is therefore not likely to be a knife blade. The broken tang is now tapering, but it is not clear whether this was always so, or is the result of corrosion. The 'blade' itself is very highly corroded and spalling, with no surface working or shaping surviving to suggest its use. The end of the 'blade' has been lost, either to damage or corrosion. It could be a file, though there are no traces of the cuts and ridges which would have formed the teeth on the working surface.
- 2.102 [083]: XR7285. Part of a bladed tool or possibly a knife, with an intact rectangular-sectioned integral tang for handle attachment. The object is 156mm long overall, the 'blade' 20mm wide x 5-6mm thick. The blade thins a little over its surviving length, but is not wedge-shaped in section – a usual knife blade characteristic. There is a slight shoulder on one side of the blade around 15mm up from its junction with the tang. Much of the blade is very highly corroded with severe surface loss and perforations. It has no visible modification to suggest its use. The well-preserved though slightly bent tang is 11.5mm wide x 6mm thick.



[083]

Handles

- 2.103 Fragments of four iron and one copper alloy handles were found. The contexts from which they were recovered are unlikely to have been where they were used. Four of the five were discovered in fill/demolition rubble associated with the conversion of

the mill into cottages. The other is a topsoil find. Four of the five (including the topsoil find) are likely to have had an industrial use, being too robust to be domestic fittings. The sole copper alloy example however, from context [135], though possibly more domestic, was also found in a location associated with the demolition/conversion debris.

- 2.104 As assemblages from the site go, five is a relatively high number. Perhaps this is not surprising, given the nature of the site. There would have been many objects/machines/contraptions which would have needed handles for operation or to adjust components, and these would have broken and needed replacement or may have become detached and been discarded.

Catalogue

- 2.105 [083]: XR7284. Part of a large iron handle 189mm long, both ends broken. At its more intact end, the handle is a faceted, sub-circular shape, 21mm tapering to 17mm in diam. The handle becomes circular in section along its length and is 12mm diam at its other broken end. At the faceted end, there is a (broken) circular-sectioned projection just 9mm long, with hints of a screw thread. The object is heavily corroded at one end, though its weight suggests a great deal of metal still remains. There is disorganised, mineralised organic material mixed in with the iron corrosion – some of it identifiable as wood fragments. Possibly a machine handle. Post-medieval.



[083]

- 2.106 [135]: Oval, copper alloy pull handle, now bent, made from sheet metal 45 x 30 x 2mm thick, with a stamped central sunburst design, edged with raised dots. The oval front is attached to a cast, tapering baluster stem, 40mm long, terminating in a small circular plate 40mm diam with a central hole filled on the back with corroded iron. This may have been a door, cabinet or drawer handle, or possibly part of a door bell pull. 19th century.



[135]

- 2.107 [165]: XR7283. Two similar though non-joining iron handle fragments 99 and 107mm long, both circular in section. Both are highly corroded with longitudinal cracks and some deep corrosion fissures, though their weight suggests much metal still remains. One is 12mm diam along its length, with a small shoulder 10mm from one broken end, where the diameter reduces to 9mm. The other fragment is also 12mm diam along its length and has a rounded shoulder just above one broken end, where the diameter was also likely reduced. It is probable that the two fragments are

related, given the similarities in their diameter and appearance. They are possibly two handles (or parts of one handle) from the same structure, object or machine. Post-medieval.

- 2.108 [180]: XR7269. Part of a well-preserved, slightly curved handle 127mm long, one end broken, the other largely intact. The broken end is square in section, 17 x 17mm max, tapering and becoming rectangular in section 12 x 8mm along its length, terminating in an almost intact, flattened, flared end, originally c18mm wide x 2.5mm thick. The square end has a sharp shoulder c11mm from the break, where the handle becomes circular in section, c9mm diam. This is also likely to have been part of a machine, as it is too heavy for a furniture or window fitting. 19th century?



[180]

Miscellaneous conserved objects

- 2.109 Many of the objects selected for conservation and further reporting could not be ascribed to the above categories. In the catalogue of these miscellaneous objects below, an assessment has been made as to whether the object was of domestic (D) or industrial (I) origin.
- Copper alloy
- 2.110 [009]: Lightly corroded, curving adjustable ?clothing suspender clip. Rectangular plate 31 x 19 x 1mm thick with three small parallel rectangular slots, 7 x 3mm, one end rounded, the other with a small shaped hook-like attachment. (D)
- 2.111 [013]: Moderately corroded, circular, lipped ?washer, 21mm diam x 15mm deep, including 5mm lip. Metal 2mm thick. Has a central 8.5mm perforation. (I)
- 2.112 [021]: Sub-rectangular fragment of bent sheet 14 x 17 x 1mm thick. One short end and parts of two sides are original. There is a possible trace of a perforation. Moderately corroded. Unknown use.
- 2.113 [038]: Parts of two small ?clothing suspenders. One is a small, oval version of [009] above, 16 x 12 x 1.5mm thick with two parallel rectangular slots. The other is a longer, bent clip with a rectangular, slightly tapering frame 29 x 15mm, which is bent over into a narrow, shaped clip with rounded end. (D)
- 2.114 [053]: Lightly corroded, slightly curving ?clothing suspender clip. Rectangular plate 19 x 14 x 0.9mm thick with two parallel slots. One short end is rounded and has a small shaped hook-like attachment. (D)



[053]

Lead alloy

- 2.115 [098]: Circular-sectioned lead alloy object, possibly complete. It is c62mm long, the lead 4mm diam. One end is rounded and possibly original, the other has been flattened to 7mm wide with a rounded top and a has a 3mm diam perforation. The metal is twisted below the flattened area. Unknown use.

Iron

- 2.116 [009] XR7287/8: Guard/inspection plate, moderately corroded. The plate is curved and slightly trapezoidal in shape, 188 x 120 x 2.5mm thick, with rounded corners. It has a small, roughly cut, rectangular perforation 25 x 20mm, near the narrower end and a series of circular, 8mm diam perforations around the edge. No evidence of burning. (I)



[009]

- 2.117 [057] XR7270: Large and highly corroded nail or fixing, apparently complete, c120mm long. The tapering shank is rectangular in section, c13 x 11mm max, with a rounded point. The circular, flat head (now bent over towards the shank) is 26mm diam. The head is surrounded by a dense mass of iron corrosion and crushed debris, including minute fragments of coal and mineralised wood, traces of which are also visible on the shank. (I)

- 2.118 [065] XR7273: Highly corroded, irregularly shaped fragment of thin (1.4mm) sheet, now bent double or perhaps deliberately folded, c86 x 67mm. It is covered both sides with a dense mass of iron corrosion and debris, including coal and stone fragments. Above this layer on one side is an area of totally corroded thin, iron plate, c50 x 36mm, with very narrow parallel lines of extremely small perforations. Possible grater or wire grill? (D/I)



[065]

- 2.119 [081] XR7275: Small fragment of irregularly shaped iron, 51 x 15 3mm thick, corrosion removed as X-ray indicated a blade fragment. This proved not to be so, but the sharp, crisp edges suggest the metal had been cut. Moderately corroded with heavily pitted surfaces. ?Scrap. (I)

- 2.120 [083] XR7285: Possible lever? Moderately corroded. The object has a rectangular 'head' with a slightly curved leading edge, 38 x 28 x 9mm thick, with a broken integral shank 49mm long, rectangular in section 12 x 11mm. (I)
- 2.121 [122] XR7274: Sub-square ?washer/reinforcement plate, highly corroded, c70 x 70 x 3mm thick. One face has a circular impression c55mm diam with a central 25mm diam perforation – indicated as circular on the X-ray. A mass of mineralised wood is attached to one side, possibly part of the object or structure to which this was originally attached. (I)
- 2.122 [135] XR7271: Incomplete sheet metal lock plate, 115+mm long x 127mm wide x 4mm thick, with fixing hole (3mm diam) surviving at one corner. The plate retains a small part of the keyhole. On the back, part of one bolt and a loose portion of a probable second bolt survive, along with parts of the attachment hasps. (I/D)



[135]

- 2.123 [165] XR7263: Circular fitting or joint, highly corroded, 18mm long. It has one wide, flaring end, 24mm diam, with a constricted 'waist' and second opening 16mm diam. Apparently intact. There is a fragment of flat, highly corroded sheet attached to one side of the smaller opening. (I)
- 2.124 [165] XR7263/7497: Part of a white metal plated ?spout or lever, 45mm long x 34mm deep. The intact, curved front has a hollow underside, then bends and becomes circular in section at the break, where it is 16mm diam. The curved section was plated with dull, white metal, probably a lead/tin alloy. (I)
- 2.125 [197] XR7262: Possible shaped hinge terminal, 69mm long x 36mm wide max. Highly corroded. The thin (2.5mm), leaf-shaped end straightens into a short rectangular-sectioned bar, now broken. The X-ray shows a small circular perforation on the shaped end and also suggests surface plating. (I/D)

Buttons

Methodology

- 2.126 All buttons were examined visually and under X10 magnification. For most, some surface soil or corrosion was removed with a water/detergent mix, locally applied, or using handtools under X10 magnification, in order to define surface detail or button backs. Eighteen buttons were selected for further investigative conservation and some of these were also X-radiographed. Five buttons were analysed using qualitative surface EDXRF analysis, to characterise alloys or surface coatings.

Results

- 2.127 A total of 30 buttons or button fragments came from 21 different contexts and unstratified, 5 contexts producing more than one (Appendix 1.4). One button was made from mother of pearl, three from glass and the remainder from copper alloys. Ten have traces of surface plating, mostly white metal but also apparent gilding, and 6 have some form of decoration or lettering. The glass and mother of pearl buttons are in good condition, the metal buttons are variable, with some being undamaged and stable, e.g. contexts [53], [72] and [81], and others with significant localised corrosion, e.g. [19] and [148]. The small button from ash layer [131] shows evidence of burning and those from contexts [14] and [197] are highly corroded. Many of the buttons described here as copper alloy are likely to have been made from the zinc/copper alloy known as 'tombac'. The presence of zinc and copper was confirmed by surface EDXRF analysis in the case of 7 of the buttons, with at least three of these being found to be surface coated with tin or a lead/tin alloy.
- 2.128 The highly corroded button from context [14] has separated into two layers and also has significant quantities of iron corrosion present. This button had an iron core which was covered by copper alloy sheet. Microscopic examination shows very small traces of possible gilding on the button underside and also a mineralised ?organic material adhering to part of the edge. The disorganised, fibrous structure of this material suggests that it is leather, probably deriving from the garment or object to which the button was attached.
- 2.129 The small, highly corroded button from rubble layer [055] was recovered attached by corrosion to a body sherd of late 18th/19th century late blackware.

Catalogue

- 2.130 [u/s]: Plain, flat probably copper alloy button, 18mm diam x 1.4mm thick, with traces of white metal surface plating. The back has a cone shank with intact, though flattened loop. 18th/E19thC.
- 2.131 [u/s]: Flat copper alloy button, 15mm diam x 1.7mm thick. Front is plain and flat. Back shows traces of gilding, has a soldered, broken shank and lettering around the edge (STANDARD RANGE GILT). 19th C. Of military origin?
- 2.132 [014]: Highly corroded iron/copper alloy button, 22mm diam x 4mm thick. Corrosion has caused it to split into two parts. Front and back plain, with bevelled edge. Shank lost. Fragments of mineralised leather adhere to part of edge and back.
- 2.133 [016]: Plain, flat copper alloy button, 16mm diam x 1.2mm thick. Front plain. Back has soldered shank with distorted loop. Tiny star stamped into back. 19th C.
- 2.134 [019]: Plain, slightly domed copper alloy button, 18.5mm diam x 1.6mm thick. Shank lost.
- 2.135 [020]: Small copper alloy button, 11.5 diam x 2mm thick. Back has soldered shank with distorted loop and lettering around the edge. This is mostly indecipherable, but the word 'BEST' is visible. Front has slightly raised edge and stamped, stylised, multi-petalled floral design. 19thC.

- 2.136 [040]: Plain, flat copper alloy button, 21.7mm diam x 2mm thick. Back has cone shank, loop lost. 18th/E19thC.
- 2.137 [053]: Plain, slightly domed copper alloy button, 14.6mm diam x 1.3 mm thick. Back has cone shank with intact loop. 18th/E19thC.
- 2.138 [055]: Small, very highly corroded copper alloy button 15mm diam x 1.5mm thick, with trace of integral shank on the back. No decoration. Found adhering to body sherd of late 18th century late blackware.
- 2.139 [072]: Plain, white metal button, 25mm diam x 1mm thick. Back has cone shank, with some copper corrosion surrounding it. Loop lost. 18th/E19thC. Surface XRF results suggest the button core is made from a Zn/Cu alloy, possibly leaded, surface coated with tin or a lead/tin alloy.
- 2.140 [081]: Plain, flat button, 16mm diam x 1.3mm thick, likely a copper alloy, with traces of white metal surface plating. The back has a cone shank with intact loop. 18th/E19thC.
- 2.141 [085]: Fragment (c25%) of an undecorated copper alloy button with white metal plating on both sides. There is a trace of a cone shank on the back. 18th/E19thC.
- 2.142 [090]: Flat copper alloy button 32mm diam x 1mm thick. Back has integral intact loop and traces of white metal plating. Front has indecipherable lettering around the edge and a design (now lost to corrosion) inside a rilled circle. Late 18thC. Surface XRF analysis suggests the button was made from a Zn/Cu alloy, surface coated with tin.



[090]

- 2.143 [106]: Plain button, probably a copper alloy with all-over white metal plating, 15mm diam x 1mm thick. Front plain, back has cone shank, loop lost. Iron corrosion on the back suggests the loop was likely iron. 18th/E19thC.
- 2.144 [106]: Slightly domed copper alloy button 19.5mm diam x 1.2mm thick. The back shows a moulding seam and has a design of two sprigs of ?laurel around the cast-in shank and loop. The front has a cast-in design of raised circles, each with 4 tiny dots arranged around them. 18thC.



[106]

- 2.145 [122]: Plain, white mother of pearl button, flat, 16mm diam x 4mm thick. Edges worn, surfaces well-preserved and shiny. The back has the broken remains of a copper alloy shank.
- 2.146 [122]: Plain, slightly domed copper alloy button, 14mm diam x 2.2mm thick max, likely with all-over white metal plating. Back is flat with a broken loop. Surface XRF results suggest a Zn/Cu alloy, surface plated all over, possibly with a lead/tin alloy.
- 2.147 [122]: Partly corroded, plain flat button, likely a copper alloy with white metal plating, 28.5mm diam x 1mm thick. Front plain, back has cone shank and intact, robust loop. 18th/E19thC.
- 2.148 [122]: Small, slightly domed copper alloy button, 14mm diam x 1mm thick. Front plain, back has integral loop, shows traces of gilding and has the words 'TREBLE GILT' and two stars. Military. 19thC.



[122]

- 2.149 [131]: Highly corroded, slightly domed copper alloy button 14mm diam x 6mm thick. Shank lost. Corrosion has caused the button to almost split into two. Distorted by burning.
- 2.150 [135]: Plain, flat copper alloy button, 14.5mm diam x 1.5mm thick. Back has cone shank, loop lost. 18th/E19thC.
- 2.151 [140]: Small, slightly domed copper alloy button, 12.5mm diam x 1.5mm thick. Front plain. Back has an intact loop and a slight lip around the outside edge. Stamped inside the lip is the word 'GILT' with arrows. Traces of gilding are visible around the lip. Surface XRF results suggest the button was a Zn/Cu alloy, with traces of gold also detected.
- 2.152 [140]: Large, flat, copper alloy button 22.5mm diam x 0.9mm thick. The back is plain with a (detached) but complete loop. The front is worn with traces of a punched ?dot design around the edge and gilding. Surface XRF results suggest the button was made from a Zn/Cu alloy, but gold, though observed, was not detected.
- 2.153 [144]: Part of an opaque, white glass button, 11mm diam x 3.4mm thick max. Biconical. The button has four very small holes within a recessed central circular area.
- 2.154 [148]: Small, flat plain button, 15.5mm diam x 0.9mm thick, likely a copper alloy with all-over white metal plating. The back has a cone shank, the loop lost. Surface XRF results suggest the button was a Zn/Cu alloy, plated with tin.

- 2.155 [148]: Large, plain, flat button, 29.6mm diam x 1mm thick. The back has a cone shank with intact loop. Surface XRF results suggest the button was a Zn/Cu alloy, plated with tin.



[148]

- 2.156 [167]: Domed top from a soldered, two-part, sheet copper alloy button, 12mm diam x 5mm deep x 0.9mm thick. Distorted. Top has fine, concentric ring decoration around a central raised dot motif. 19thC.



[167]

- 2.157 [184]: Moulded, translucent emerald green glass button, 12.4mm diam x 4mm thick max. Domed with a central flattened top. The front has two concentric rings of raised dots around an engine-turned, 8-petalled flower design on the slightly raised, flat central area.



[184]

- 2.158 [185]: Highly corroded copper alloy button 14mm diam x 2mm thick max, possibly originally slightly domed. The flat back had a loop, now lost. All surface corrosion products lost or removed.

Discussion

- 2.159 The 30 buttons all come from locations which point to casual loss or perhaps – in the case of those which appear broken, e.g. [40] and [106] - deliberate disposal. There is no indication in the majority of cases that the buttons were attached to anything at the moment of loss or disposal. The exception is the highly corroded copper alloy/iron button from [14], which has traces of mineralised leather around the edge, suggesting that at least part of the garment was attached when it was lost or disposed of.
- 2.160 There are several large and medium-sized, plain flat buttons, e.g. [106, 122, 148], most with white metal surface plating and loop or cone and loop shanks, which are likely to derive from men's work attire. Some smaller buttons were also found, however, one of which, [184], clearly comes from a female garment, though others, e.g. [122] and [144], may have been from men's shirts or undergarments.

Lead alloy window comes

Methodology

- 2.161 All fragments were examined. Lengths of single pieces and samples of multiple pieces were measured, as were widths, where intact. Selected surfaces and web interiors were cleaned using non-metal tools and brushes to enable examination of surface features and to reveal the number of milling teeth, which were counted using X10 magnification. Only the fragments from [119] which included the *in situ* glass were conserved. The pieces are mainly moderately corroded and stable, but some are highly corroded and fragile.

2.162 Results

Some 69 fragments of lead window from 12 contexts were examined to establish whether they included any pieces older than post-medieval (Appendix 1.5). No earlier pieces were identified. Most contexts produced only small numbers and most of the fragments are relatively small and flattened. The leads were originally 'H' shaped in section, with somewhat variable widths, in the region of 10-14mm. Many appear visually similar. Lead from three contexts [55, 119, 185] still contained small fragments of the window glass. This was found to be unweathered, 1.5 -2mm thick and green/clear in colour.

- 2.163 A group of pieces from [185] – the context producing the most lead – was thought by the excavators to have lain in their original positions. These pieces make a small, square frame of c95 x95mm, suggesting windows made up of small, square (or possibly rectangular) panes. This is supported by the relatively high number of joins which survive and the short length of the fragments. Many of the joins appear rather clumsy – perhaps reflecting the elevated position or the original, non-domestic function of the windows, where less than perfect craftsmanship would be less important and noticeable.

- 2.164 All the comes are milled, giving the lead a post 16th century date, when mills replaced earlier cast methods for making window lead (Egan 2005, 68). Milled lead has a characteristic pattern of 'teeth' in the base of the come web, and the number of 'teeth' were counted here, where possible, giving a variable result of between 12-20 per 20mm. They were also found to be rather irregularly spaced. This is somewhat strange if it is presumed that most of the lead originates from one building.

Catalogue

- 2.165 [009]: 5 fragments, flattened, 94-165mm long, 11 or 14mm wide. One piece with join. Milled. Wider pieces 12 teeth per 20mm, narrower pieces 18 teeth per 20mm.
- 2.166 [016]: 5 fragments, flattened, 68-106mm long, 11, 12, 14mm wide. All milled. One piece with join. Wider pieces milled at 15 teeth per 20mm, narrower pieces 8 or 20 teeth per 20mm.
- 2.167 [053]: 3 fragments, flattened, 26-58mm long, 11-12mm wide. Milled at 17 teeth per 20mm, where examined.
- 2.168 [055]: 12 fragments, flattened, 33-202mm long. The longest piece is a joined right-angled corner with a fragment of unweathered glass 1.5mm thick *in situ*. One fragment is 10mm wide, the others are 14mm wide. Narrow piece milled at 16 teeth

per 20mm, wider pieces at 15 teeth per 20mm, where examined. One piece was surface analysed using EDXRF. Analysis confirmed lead was present, together with a small amount of tin – probably from the solder used to join the comes.

- 2.169 [079]: 1 fragment, bent and highly corroded, 52mm long, width not measurable, milled at 10 teeth per 20mm.
- 2.170 [119]: 9 fragments, flattened and bent, 26-129mm long, 8 with a measurable intact width of 11mm. Milled at 11 or 17 teeth per 20mm where examined. Includes a group of 5 associated pieces, one right angled fragment with a shard of slightly weathered green/clear glass 1.4mm thick *in situ*. Clumsy join at the corner.



[119]

- 2.171 [121]: 1 fragment, flattened and very damaged, 121mm long, 12mm wide. Milled at 20 teeth per 20mm.
- 2.172 [122]: 1 fragment, flattened, 124mm long x 12mm wide. Milled at 15 teeth per 20mm, irregularly spaced. The fragment was surface analysed using EDXRF. Analysis confirmed lead was present, together with a small amount of tin – probably from the solder used to join the comes.
- 2.173 [144]: 2 fragments, twisted and flattened, 31 & 42mm long, width not measurable. Milled, but teeth could not be counted.
- 2.174 [170]: 1 fragment, flattened and very damaged, 58mm long x 10mm+ wide. Milled at 12 teeth per 20mm.
- 2.175 [184]: 2 fragments, flattened, bent and damaged, 36 & 72mm long, includes part of a join, incomplete widths 10mm+. Milled at 20 teeth per 20mm.
- 2.176 [185]: 27 fragments in relatively poor condition, several pieces contaminated with iron corrosion products. Pieces up to 92mm long max. Where intact, widths are 12-13mm. Includes 4 fragments with untidy joins up to 22mm wide. The assemblage also includes a group of 4 pieces, thought by the excavators to be associated into a small (now non-joining) square frame c95 x 95mm (outside measurement of lead), plus part of one arm from a further frame. Two small fragments of unweathered, green/clear glass, 2mm thick, survive in a corner join and inside the web. Came width 12-13mm. All the intact fragments from this context have a similar appearance and are probably associated. All are milled, where examined, with teeth at 18 per 20mm. One piece was surface analysed using EDXRF. Analysis confirmed

lead was present, together with a small amount of tin – probably from the solder used to join the comes.



[185]

Discussion

- 2.177 Lead has always been easily recyclable, valuable and expensive, and it is strange that it was not all gathered up for re-use. Unless, of course, we are only seeing a small fraction of the amount originally on site, most of which was in fact removed.
- 2.178 Visual similarities between the fragments suggest they do come from the same structure – likely the engine house known to have existed on the site. The variability in their manufacture – as evidenced by the variability in the width of the leads and in the number of milling teeth - suggests either multiple periods of use/replacement or that the leads were brought to site from several different sources of manufacture at the same time.

Coins analysis

Results

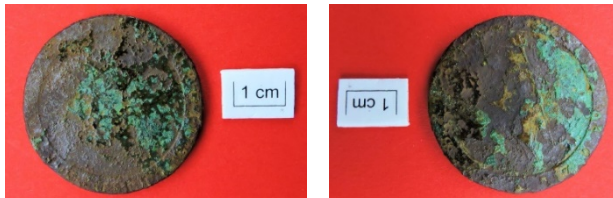
- 2.179 Seven copper alloy coins were recovered. All were conserved prior to specialist examination, using hand tools under X10 magnification to remove obscuring soil and corrosion products to facilitate identification and dating. The surfaces were then stabilised/consolidated using 6% Paraloid B72 (an ethyl methacrylate co-polymer) in acetone.

Catalogue

- 2.180 George III
Halfpenny; copper
Tower Mint, London
First issue, 1773
Heavy wear
B17.098; Bag 218



- 2.181 George III
Penny; copper
Soho Mint, Birmingham
Second issue, 1797
Corroded
B14.021; Bag 22



- 2.182 George III
Halfpenny; copper
Soho Mint, Birmingham
Third issue, 1799
Moderate wear
Bottoms 2013 u/s; Bag 6



- 2.183 George III
Halfpenny; copper
Soho Mint, Birmingham
Fourth issue, 1806
Moderate wear, corroded
B15.083; Bag 66 (2)



- 2.184 George III
Halfpenny; copper
Soho Mint, Birmingham
Fourth issue, 1806
Moderate wear, corroded
B16.170; Bag 196



- 2.185 George III
Halfpenny; copper
Soho Mint, Birmingham
Fourth issue, 1806
Moderate wear, corroded
B15.083; Bag 217 (1)



- 2.186 George III
Halfpenny; copper
Soho Mint, Birmingham
Fourth issue, 1807
Moderate wear
B16.106; Bag 175



Discussion

- 2.187 The assemblage is representative of the copper coinage in circulation in the early years of the 19th century. The single heavily worn Tower Mint halfpenny from [098] is a typical example of a coin struck using a hand-operated screw press. This technology was obsolete by the end of the 18th century and in 1797, following the recommendations of the Liverpool Committee, the contract for the striking of Britain's copper coinage was handed to Mathew Boulton's and James Watt's privately-owned Soho Mint in Birmingham.
- 2.188 Boulton and Watt used cutting-edge, steam-driven coining presses to produce coins that were technically far superior to anything that the Tower Mint could produce using its manual technology. The initial 'Cartwheel' issue of two-pennies and pennies struck in 1797 was later supplemented by halfpennies and farthings in 1799. A further series of pennies, halfpennies and farthings were struck to a lighter weight standard in Birmingham during 1806-07.
- 2.189 In total, some £679,311 worth of copper coins was struck at the Soho Mint.

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Appendix 1: Data tables

Table 1.1: Medieval and pearlware pottery data

Code	Context	Bag	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sherd No.
B14.205	100.044	39	Holcombe Orange Gritty ware	1	10	1	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Soft orange body w/ abundant sub-rounded quartz up to 1mm	
B14.205	100.044	39	Holcombe Orange Gritty ware	1	8	1	BS	Hollow ware	U/Dec	M/LC12 th – LC13 th	Heavily abraded orange gritty fabric	
B14.205	100.044	39	Holcombe Orange Gritty ware	1	11	1	BS	Hollow ware	U/Dec	M/LC12 th – LC13 th	Heavily abraded soft orange fabric w/ abundant quartz	
B14.205	100.045	41	Holcombe Buff Gritty ware	1	2	1	BS	Hollow ware	U/Dec	M/LC12 th – LC13 th	Hard buff fabric w/ quartz w/ soft red grit up to 1mm, occ larger	
B15.200	100.070	26	Holcombe Orange Gritty ware	1	7	1	BS/shoulder	U/ID	U/Dec	M/LC12 th – LC13 th	Hard buff ext, softer orange int; gritty throughout	6
B15.200	100.070	26	Holcombe Orange Gritty ware	1	4	1	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Heavily abraded throughout	
B15.200	100.070	26	Holcombe Orange Gritty ware	1	5	1	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Soft orange fabric; heavily abraded	
B15.200	100.070	26	Holcombe Orange Gritty ware	1	2	1	BS/shoulder	U/ID	U/Dec	M/LC12 th – LC13 th	Buff to orange gritty fabric	
B15.200	100.070	26	Holcombe Orange Gritty ware	1	5	1	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Unusually thick sherd in a typical fabric	
B15.200	100.070	26	Holcombe Orange Gritty ware	1	3	1	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Very heavily abraded sherd	
B15.200	100.070	26	Buff Sandy ware	2	3	1	BS	Hollow ware	Possible dark brown slip ext; rilled profile	M/LC12 th – LC13 th	A fine yellow-buff fabric w/ fine white streaks; abundant quartz up to 0.5mm, sparse iron grit occ up to 1mm	
B15.200	100.070	39	Holcombe Orange Gritty ware	1	6	1	BS	Hollow ware	U/Dec	M/LC12 th – LC13 th	Typical buff ext w/ soft orange int surface	
B15.200	100.070	39	Holcombe Orange Gritty ware	1	1	1	Fragment	U/ID	U/Dec	M/LC12 th – LC13 th	Small, heavily abraded orange fragment	
B15.200	100.070	39	Holcombe Orange Gritty ware	1	1	1	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Heavily abraded buff to orange fragment	
B15.200	100.070	39	Holcombe Orange Gritty ware	1	2	1	BS	Hollow ware	U/Dec	M/LC12 th – LC13 th	Heavily abraded buff to orange fabric	
B15.200	100.070	39	Holcombe Orange Gritty ware	1	2	1	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Hard buff ext surface; abraded soft orange int surface	
B15.200	100.070	39	Holcombe Orange Gritty ware	1	5	1	BS	Hollow ware	U/Dec	M/LC12 th – LC13 th	Dull buff ext surface, heavily abraded	
B15.200	100.070	39	Holcombe Orange Gritty ware	1	9	1	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Heavily abraded all over	
B15.200	100.070	39	Holcombe Orange Gritty ware	1	2	1	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Small abraded fragment	
B15.200	100.070	39	Holcombe Orange Gritty ware	1	5	1	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Orange margins, grey core; heavily abraded	

Code	Context	Bag	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sherd No.
B15.200	100.070	39	Gritty ware	1	2	1	BS	Hollow ware	U/Dec	M/LC12 th – LC13 th	Hard dull buff to grey fabric w/ common quartz up to 1mm, occ up to 2mm	
B15.200	100.070	43	Holcombe Orange Gritty ware	1	2	1	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Heavily abraded int & ext; concreted quartz grains up to 2mm	
B15.200	100.070	43	Holcombe Orange Gritty ware	1	7	1	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Very heavily abraded	
B15.200	100.070	43	Holcombe Orange Gritty ware	1	5	1	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Heavily abraded buff to orange fabric	
B15.200	100.070	43	Holcombe Orange Gritty ware	10	10	10	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Small abraded fragments	
B15.200	100.070	43	Holcombe Orange Gritty ware	1	7	1	BS	Hollow ware	U/Dec	M/LC12 th – LC13 th	Dull buff-orange ext, pale grey reduced int surface; hard throughout	
B15.200	100.070	43	Holcombe Orange Gritty ware	1	4	1	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Hard buff ext, soft abraded orange surface int	
B15.200	100.070	43	Holcombe Orange Gritty ware	1	2	1	BS	Hollow ware	U/Dec	M/LC12 th – LC13 th	Abraded all over	
B15.200	100.070	43	Holcombe Orange Gritty ware	1	4	1	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Very heavily abraded sherd	
B15.200	100.070	43	Holcombe Orange Gritty ware	1	1	1	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Heavily abraded soft orange fragment	
B15.200	100.070	43	Holcombe Orange Gritty ware	1	1	1	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Heavily abraded soft orange fragment	
B15.200	100.070	51	Holcombe Orange Gritty ware	1	1	1	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Heavily abraded	
B15.200	100.070	51	Holcombe Orange Gritty ware	1	1	1	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Buff ext, oxidised int; heavily abraded	
B15.200	100.070	69	Holcombe Orange Gritty ware	1	15	1	BS	Hollow ware	U/Dec	M/LC12 th – LC13 th	Buff ext w/ patchy sooting; soft orange int, abraded	
B15.200	100.070	69	Holcombe Orange Gritty ware	1	2	1	BS	Hollow ware	U/Dec	M/LC12 th – LC13 th	Heavily abraded fragment	
B15.200	100.070	69	Holcombe Orange Gritty ware	1	10	1	Rim	Jar	U/Dec	M/LC12 th – LC13 th	Very heavily chipped & abraded clubbed rim	
B15.200	100.070	69	Holcombe Orange Gritty ware	1	6	1	BS	Hollow ware	U/Dec	M/LC12 th – LC13 th	Abraded; soft orange throughout	
B15.200	100.070	69	Holcombe Orange Gritty ware	1	2	1	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Very heavily abraded orange fragment w/ quartz & soft buff rock frags	
B15.200	100.070	69	Holcombe Orange Gritty ware	1	2	1	BS	Hollow ware	U/Dec	M/LC12 th – LC13 th	Sooted ext surface; soft orange int surface	
B15.200	100.070	69	Holcombe Orange Gritty ware	1	2	1	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Heavily abraded orange gritty fragment	
B15.200	100.070	69	Holcombe Orange Gritty ware	1	4	1	BS	Hollow ware	U/Dec	M/LC12 th – LC13 th	Soft orange throughout; heavily abraded	
B15.200	100.070	69	Holcombe Orange Gritty ware	8	7	8	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Small abraded fragments	

Code	Context	Bag	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sherd No.
B15.200	100.070	69	Holcombe Orange Gritty ware	1	6	1	BS	Hollow ware	U/Dec	M/LC12 th – LC13 th	Hard buff ext surface; abraded soft orange int surface	
B15.200	100.070	69	Holcombe Orange Gritty ware	1	3	1	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Abraded body sherd; light sooting ext	
B15.200	100.070	69	Holcombe Orange Gritty ware	1	4	1	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Very heavily abraded sherd; orange throughout	
B15.200	100.070	69	Holcombe Orange Gritty ware	1	3	1	BS	Hollow ware	U/Dec	M/LC12 th – LC13 th	Buff ext margin, soft int margin; heavily abraded	
B15.200	100.070	69	Holcombe Orange Gritty ware	1	7	1	BS	Hollow ware	U/Dec	M/LC12 th – LC13 th	Hard buff ext margin, soft orange int surface, abraded	
B15.200	100.070	69	Holcombe Orange Gritty ware	1	5	1	BS	Hollow ware	U/Dec	M/LC12 th – LC13 th	Heavily abraded sherd in a soft orange fabric	
B15.200	100.070	69	Holcombe Orange Gritty ware	2	9	1	Rim	Jar	Rounded everted rim w/ ridge on internal surface of rim	M/LC12 th – LC13 th	Orange margins w/ pale grey core (two bags); may be part of sherd 49	
B15.200	100.070	69	Holcombe Orange Gritty ware	1	41	1	Rim	Jar	Everted rounded rim w/ lid-seated profile; rilled shoulder	M/LC12 th – LC13 th	Orange fabric	
B15.200	100.070	69	Holcombe Orange Gritty ware	2	26	1	Rim	Jar	Everted rim w/ lid-seated profile & rilled shoulder	M/LC12 th – LC13 th	Hard buff ext surface, soft orange int surface	8 & 9
B15.200	100.070	70	Holcombe Orange Gritty ware	1	2	1	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Heavily abraded typical buff to orange gritty fabric	
B15.200	100.070	83	Holcombe Orange Gritty ware	1	4	1	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Heavily abraded but w/ traces of sooting ext	
B15.200	100.070	83	Holcombe Orange Gritty ware	1	1	1	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Heavily abraded fragment	
B15.200	100.070	83	Holcombe Orange Gritty ware	1	1	1	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Heavily abraded orange fragment	
B15.200	100.070	83	Holcombe Orange Gritty ware	1	4	1	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Very soft orange fabric; heavily abraded	
B15.200	100.070	83	Holcombe Orange Gritty ware	1	3	1	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Buff ext, soft orange int; heavily abraded	
B15.200	100.070	88	Holcombe Orange Gritty ware	1	1	1	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Hard buff ext, abraded oxidised int	
B15.200	100.070	88	Holcombe Orange Gritty ware	1	2	1	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Buff ext, orange int; abraded	
B15.200	100.070	88	Holcombe Orange Gritty ware	1	1	1	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Buff ext, orange int; abraded	
B15.200	100.070	88	Holcombe Orange Gritty ware	3	2	3	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Small, heavily abraded fragments; all heavily abraded	
B15.200	100.070	88	Holcombe Orange Gritty ware	1	28	1	Rim	Jar	Lid-seated style rim w/ pointed lip & rilled shoulder	M/LC12 th – LC13 th	Abraded surfaces; sub-round quartz up to 2mm; light sooting on ext of rim	
B15.200	100.070	101	Gritty ware	1	9	1	BS	Hollow ware	U/Dec	M/LC12 th – LC13 th	Hard, dense grey fabric w/ dull orange margins; common quartz up to 1mm, occ larger	50
B15.200	100.070	101	Holcombe Orange Gritty ware	1	25	1	Rim	Jar	Rounded everted rim w/ ridge on internal surface of rim	M/LC12 th – LC13 th	Orange surfaces w/ grey core; may be part of the vessel from Bag 69	49

Code	Context	Bag	Type	No	Wt	ENV	Part	Form	Decoration	Date range	Notes	Sherd No.
B15.200	100.070	101&26	Holcombe Orange Gritty ware	2	36	1	Rim	Jar	Thick rounded everted rim w/ lid-seated profile	M/LC12 th – LC13 th	Typical buff to soft orange fabric	51 & ?
B15.200	100.070	88	Holcombe Orange Gritty ware	1	3	1	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Hard buff ext, abraded oxidised int	
B15.205	100.043	47	Holcombe Orange Gritty ware	1	2	1	BS	Hollow ware	U/Dec	M/LC12 th – LC13 th	Typical orange to buff gritty fabric	
B15I.200	100.070	101	Holcombe Orange Gritty ware	1	2	1	BS	Hollow ware	U/Dec	M/LC12 th – LC13 th	Hard buff ext surface, soft abraded int surface	
B16.190	105.144	191	Transfer-printed Pearlware	2	248	1	Complete	Plate	Transfer-printed Chinese style floral design int (lotus pattern?)	c.1780 – c.1840	Small plate w/ recessed base	
B16.195	100.093	122	Pearlware	7	124	1	Profile	Dish	Hand-painted blue bands int around a central pineapple design	c.1780 – c.1840	Impressed hand symbol on underside of base	
B16.195	105.140	141	Pearlware	2	78	1	Profile	Cup/bowl	Hand-painted floral spray int; stylised floral frieze ext; all over-glaze	c.1780 – c.1840	Small cup-sized bowl w/ angular ring foot base	
B16.200	095.117	120	Holcombe Buff Gritty ware	1	2	1	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Buff throughout; harder & slightly finer than Holcombe Orange Gritty ware	
B16.205	095.118	108	Holcombe Orange Gritty ware	1	2	1	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Buff ext, oxidised int; heavily abraded	
B16.205	095.118	108	Holcombe Orange Gritty ware	1	3	1	BS	Hollow ware	U/Dec	M/LC12 th – LC13 th	Hard buff ext, soft orange int surface	
B16.205	095.118	108	Holcombe Orange Gritty ware	9	9	9	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Typical orange to buff gritty fabric	
B16.205	100.160	189	Gritty ware	1	2	1	BS	Hollow ware	U/Dec	MC11 th – E/MC13 th	Buff to pale grey gritty ware	
B16.205	105.171	215	Gritty ware	1	6	1	BS	Hollow ware	Rilled ext profile	MC11 th – E/MC13 th	Hard throughout; reduced int, dull orange ext; hard dense fabric w/ quartz up to 1mm, occ up to 2mm	
Bottoms	070	91	Holcombe Orange Gritty ware type	3	1	3	BS	U/ID	U/Dec	M/LC12 th – LC13 th	Three small, very heavily abraded fragments	
			Total	118	895	106						

Table 1.2: Animal bone and shell by number and type and context

Context	55	72	83	86	93	131	135	140	165	178
Cattle size	3	3					1			
Sheep		1								
Sheep size		1				1		1		
?Hare										1
Indeterminate					1				2	
Cockle		2								
Mussel			1							
Whelk				1						

Table 1.3: Contexts producing >30 clay pipe fragments

Context	Type	No of pipe fragments
048	Topsoil	41
053	Cinder layer	32
109	Garden loam	34
131	Cinder and ash layer	31
178	Ash layer	126

Table 1.4: Button numbers by context and material

Context	Context type	No	Material	Dec	Plating	Leather	XRF
u/s 2013		2	Metal		1		
u/s 2013		1	Glass				
014	Stone loam	1	Metal		Y	1	
016	Wall fill	1	Metal	1			
019	Edging stones	1	Metal				
020	Cobble stones	1	Metal	1			
040	S of drain [25]	1	Metal				
053	Cinder layer	1	Metal				
055	Rubble and mortar	1	Metal				
072	Rubble under C bay flags	1	Metal		1		Y
081	E bay redeposited natural	1	Metal		Y		
085	Topsoil	1	Metal		Y		
090	Black loam & mortar	1	Metal	1			Y
106	W bay W room floor	2	Metal	1	1		
122	Fill W bay sunken feature	1	Mother of pearl				
122	Fill W bay sunken feature	1	Metal		Y		Y
122	Fill W bay sunken feature	2	Metal	1	2		
131	Cinder & ash layer	1	Metal				
135	W bay	1	Metal				
141	Stone feature inside W bay	2	Metal		Y		Y
144	W edge topsoil	1	Glass				
148	Fill under W bay soakaway	2	Metal				Y
167	Clay fill	1	Metal	1			
184	Clay & ash layer	1	Glass				
197	Stone and loam layer	1	Metal				
Total		29		6	10		5

Table 1.5: Lead came fragment numbers by context

Context	Context type	Fragments	Notes
009	Rubble fill	5	1 join
016	Wall fill	5	1 join
053	Cinder layer	3	inc right angled piece with join
055	Rubble and mortar	12	XRF. 2 joins, glass frag
079	Cent bay clay & mortar fill	1	
119	Topsoil over E bay N wall	9	
121	W bay sunken feature	1	
122	W bay sunken feature fill	1	XRF
144	W edge of topsoil	2	
170	Gravel & clay under cent bay	1	
184	Clay & ash layer	2	1 part join
185	Stone & clay layer	27	XRF. Inc 4 joins, 'complete' small pane with glass frag's
Total		69	